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## Quality teaching beyond games through Game Sense pedagogy

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### ABSTRACT

This article builds upon suggestions for applying Game Sense pedagogy to sports other than games in ways that provide high quality teaching and learning as suggested by the New South Wales Quality Teaching Framework. It provides two practical examples of how this might be achieved for teaching how to throw and a technique for catching and pulling in freestyle swimming. It draws on my own experience of teaching and observations of others' practice as part of a program of work striving to establish a dialectic between theory and practice.

Keywords: physical education pedagogy; quality teaching, Game Sense, throwing, swimming, individual sports.

## INTRODUCTION

An emphasis on the provision of quality teaching as a means of providing quality learning and positive educational outcomes is evident across the range of state documents in Australia and features in the move toward a national curriculum in the Health and Physical Education (HPE) Key Learning Area (KLA). It has also loomed large in the media as being pivotal to the success of high performing schools in Asia and there can be little doubt about the importance of high quality teaching in the classroom, gym or field. While it is a contentious issue that is difficult to be precise about (see Ball, 2006) the NSW Quality Teaching Framework (NSWQTC-2003a, b, c) provides comprehensive indicators of teaching quality based upon extensive programs of research conducted in the US and Australia (Light, Curry & Mooney, 2014). The expectations of what constitutes quality teaching set out in the NSW QTF can be met with theoretical/abstract teaching in Health and in the senior Physical Education syllabus by drawing on developments in quality teaching across the range of other KLA. However, given the dominance of the ‘sports skills’ approach in physical education in Australia and other developed countries (Kirk, 2010) this presents a significant challenge for teaching in the practical physical education curriculum from primary school to year ten.

In games teaching a number of researchers in physical education have recognised and promoted the quality teaching evident in the pedagogy used in game based approaches (GBA) to games teaching such as Game Sense, Teaching Games for Understanding (TGfU) and the Game Concept Approach (GCA) due to its learner-centred, inquiry-based pedagogy (see, Butler, 2005; Fry, Tan, McNeill, & Wright, 2010; Hopper, Butler & Story, 2009). In Australia this has extended to suggestions that Game Sense pedagogy can provide quality teaching as identified in the NSWQTF (Light *et al.*, 2014; Pearson, Webb & McKeen, 2006). While GBA such as Game Sense can offer quality teaching for the practical physical education curriculum this begs the question of what to do about the rest of the practical curriculum. In activities such as athletics and swimming where technique seems to be so important and which are not games, what can teachers do to provide quality teaching?

The answer to this question lies in identifying the core features of pedagogy used in GBA such as Game Sense rather than taking a models-based practice approach (Metzler, 2005) that sets out a specific order of stages or steps to be undertaken. Previously I have written about

taking this approach (Light, 2008) but have since set out what I suggest can be seen as the four core characteristics of a Game Sense approach (Light, 2013) that can be applied to teaching beyond games to provide high quality teaching in any practical activity. In this article I build on suggestions for applying GBA pedagogy to individual sports (Light & Wallian, 2008; Martin & Gaskin, 2004) to provide two examples of how this might be done. I do this by drawing on my own experience of trying out these ideas and observations of others' practice as part of a program of work striving to establish dialectic between theory and practice (see, Light & Wallian, 2008). This is preceded by brief outlines of the NSWQTF and Game Sense pedagogy.

### **THE NSW QTF**

The NSW QTF (2003a) provides a framework for providing high quality pedagogy across all KLA focused on teaching practices that research suggests contribute toward improving student learning outcomes. Based upon research in the US such as that conducted by Newman and Associates (1996) and the 'productive pedagogies' work in Queensland (Queensland School Reform Longitudinal Study, 2001) it identifies three key dimensions of quality pedagogy as that which:

1. Is fundamentally based on promoting high levels of *intellectual quality*
2. Is soundly based on promoting a *quality learning environment*
3. Develops and makes explicit to students the *significance* of their work.

*Intellectual quality* produces deep understanding of important, substantive concepts, skills and ideas and links learning to core concepts. This is evident in the Game Sense approach of basing learning on core concepts of manipulating time and space in invasion games. It also requires active construction of knowledge with students engaged in higher-order thinking and communicating substantively about what they are learning. In a high *quality learning environment* students and teachers work productively in an environment that is clearly focused on learning as is done in Game Sense. It has high and explicit expectations for learning, and provides tasks that are challenging enough to extend and engage students yet, which are achievable with game design and planned management. Quality learning environments also promote positive relationships between teachers and students and among

students reflected in collaboration and interaction that is evident in a good Game Sense lesson. In this environment students have input into making decisions about what and how they learn, they are engaged, self-regulating and self-directed and this is encouraged in Game Sense as the learners adapt to this pedagogical approach (Light, 2013).

For learning to be significant students must be able to see the relevance of what and how they learn for living in their own *worlds*. It is evident when students understand how broader and deeper learning developed in school is applicable in, and useful for, life outside. In Game Sense this should go beyond the tactical overlap between games practised at school and sport played outside school to include learning how to learn in all areas of life.

### **GAME SENSE PEDAGOGY**

Rather than provide any detail on the specifics of what Game Sense is this article outlines and briefly discusses the framework for Game Sense pedagogy (Light, 2013) within which there is room for teachers and coaches to adapt Game Sense pedagogy to their own preferences and dispositions, the nature of the learners and the aims of the teaching or coaching. The four main features of a Game Sense approach are that teaching involves: providing an appropriate (physical) learning environment, using questions to stimulate dialogue, interaction and reflection, collaboration to formulate test and evaluate solutions to problems, providing a supportive socio-moral environment.

#### *1. Providing an appropriate (physical) learning environment*

This is the most important aspect of a Game Sense approach because when teachers ‘get the game right’ (Thorpe & Bunker, 2008) players learn through a process of adaptation that occurs largely at a non-conscious level and the neo-Darwinian conception of learning evident in Piaget’s work (see, Piaget, 1976). This is also the key to the indirect teaching approach that makes Game Sense learner centred because it is through responding to the demands of the practice game that learning takes place. For teaching skill, technique or activities that are not games this should be extended to include the provision of learning experiences such as those outlined in this article.

## *2. Using questions to stimulate dialogue, interaction and reflection*

When Thorpe visited Australia during the nineteen nineties to develop Game Sense many Australian coaches were already using games in their coaching but it was his emphasis on questioning that made the approach most distinct and which made his biggest contribution to Game Sense (Light, 2004). In Game Sense questioning is used to stimulate thinking, dialogue and reflection from which learning in and about games emerges and unfolds. It is designed and developed as open-ended questions to promote and enable possibilities and reflection upon action.

## *3. Collaboration to formulate test and evaluate solutions to problems*

The relationship between action and language (body and mind) is central to Game Sense, TGfU and other GBA with periods of action and thinking in and through action inter-dispersed and interacting in a process leading to comprehensive learning (see, Light & Fawns, 2003). Often labelled as the debate of ideas (Gréhaigne, Richard & Griffin, 2005) this is collaborative reflection upon experience (as a second experience – Dewey, 1916/1997) and a central way of learning according to social constructivist theories of learning developed from the work of Vygotsky (see, 1978) and Bruner (see, 1996).

## *4. Providing a supportive socio-moral environment*

While the development of a physical learning environment aligns with the NSWQTF, the provision of a supportive socio-moral learning environment is more tightly aligned. Having students engage in learning, collaborate to formulate and test ideas in games and take risks requires a supportive environment in which ‘mistakes’ are seen as being essential for learning. It is in such an environment that positive relationships between students and between students and the teacher are developed.

## **APPLYING GAME SENSE PEDAGOGY OUTSIDE GAMES**

When Game Sense pedagogy is reduced to the above four features it can be applied outside games to activities such as athletics and swimming to provide quality teaching (see, Martin & Gaskin, 2004). In the following section I provide two suggestions for doing this by drawing on my own experience of teaching undergraduate primary pre-service teachers and my

observations of an expert swimming coach to provide examples of teaching throwing and swimming.

### *1. Throwing*

In this example I draw on my teaching of primary school generalist teachers at the University of Melbourne to help them develop a student centred approach to throwing. It stands in contrast to the ‘fundamental skills’ approach of identifying specific aspects of the ‘correct’ way to throw that are to be refined and corrected to eliminate errors until up to an acceptable standard. In contrast it works on developing a comprehensive understanding of four core concepts of all throwing and applying it to throwing a particular implement as an example of providing intellectual quality. It also provides a much more positive experience of learning (Light, 2014).

In this series of lessons the students are provided with opportunities to explore and discover four core concepts common to most throwing through doing, reflection, dialogue and collaboration after which they are asked to apply this understanding to a specific object and/or situation. The four core concepts are (1) movement from back to front, (2) movement of joints from flexion to extension, (3) conservation of momentum from rotation of large body mass (lower body) to smaller body mass (upper body) and (4) movement from low to high. They also might consider the best angle of release, which is typically around 45 degrees.

The class is divided into small groups much like the small-sided games in TGfU and Game Sense. Each group is given a number of objects that they must develop a way of throwing as far as possible and which should present a challenge for them to throw according to their shape, dimensions and or weight. Keeping in mind that safety is a major concern here students are encouraged to experiment and reflect upon results as a group in a process that involves dialogue and productive interaction as the teacher moves between groups asking questions ‘on the run’ and intervening to ensure dialogue is positive, productive and inclusive. S/he also encourages them to think about the four key concepts of throwing leading them through a guided discovery approach (Mosstan and Ashworth, 1986).

When each group has made progress toward identifying and applying the four principles the teacher pulls them into a whole class group to further develop and articulate understanding in

a larger group, including having some students demonstrate and have the others discuss their technique. Examples of questions that might be asked in this situation are: Why do you think that throw got such a good result? Were you doing anything differently that you think could have helped get that result? For good throws the teacher could ask the student to repeat the throw and have his/her peers suggest what was contributing to the good result and which might typically involve asking questions such as “did you see anything that you think might have contributed toward getting that sort of distance from the throw?” or ask the thrower “was there anything you were focusing on?” or “was there anything about the way that felt that you think helped get good distance?”.

The guided discovery approach adopted here is focused on discovering the four key concepts of throwing and may require some quite focused questions. For example, this could include asking “ Did anyone notice a shift in weight during the throw?”, “ where is the power for this throw coming from – where is it originating?” or “watch his/her legs during the throw and tell me what is happening?”. After clearly identifying the four key concepts as a whole class the same groups can then be asked to apply this knowledge to throwing a specific object in a particular situation. This could involve throwing an implement such as a javelin or throwing a ball in a particular game such as handball or a cricket ball in a practice game focused on throwing.

In this approach the students develop a deep understanding of throwing by basing throwing technique on the four key concepts outlined. This conceptual understanding of throwing empowers the students to be independent and self-directed learners who can work through technical problems that arise when throwing anything and in any setting. The supportive socio-cultural environment provides a quality, learning environment with positive and productive relations between students and between teachers and students, a focus on learning and expectations of achievement. The significance is clear for throwing in or out of games and for throwing any object as well as possibly informing other activities.

## *2. Swimming: keeping the elbow high in freestyle*

For this example I draw on experience as an observer of an elite level (male) swimming coach in Australia at a training camp in Sydney for age group swimmers. He began his session talking about why it is important to keep the elbow up and out from entry in freestyle

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because it brings into play the large latissimus dorsi muscles. He first explained how dropping the elbow during the stroke disengages these muscles leaving the much smaller triceps to take the load, making the stroke far less efficient. He then had the swimmers engage in some one-on-one fun contests out of the water on poolside he called ‘unders and overs’. This was aimed at having them understand *why* it was better to keep the elbow high in freestyle upon catching the water after entry of the hand through *experience*.

The swimmers formed pairs facing each other with swimmer A having hands up and elbows in close to the body with swimmer B opposing, hands facing down, elbows in and pushing down against swimmer A. Invariably swimmer A seemed to have the advantage. Swimmer B was then asked to push down with elbows out wide thus engaging the large latissimus dorsi muscles and giving swimmer B the advantage. The partners reversed roles and were then asked, when pushing down, which position was stronger and why. The coach then said that this is the reason why they needed to concentrate on having their elbows out when catching the water at the beginning of the stroke.

This activity was designed to have the young swimmers understand why they had to perform a technique through experiencing it and developing deep understanding of the technique. They were being encouraged to understand *why* and not just mindlessly imitate *how* it should be done. After this activity the squad jumped in the pool to practise freestyle and try out this new understanding in action and, from my observations on the day, it seemed to work. This approach was already providing some intellectual quality and some aspects of a quality learning environment by encouraging positive relationships between learners and between learners and the coach.

By applying some more of the features of Game Sense pedagogy the coach could have stepped up the quality of teaching and learning with little trouble. For example, he could have initially not told the swimmers why they were doing the activity to allow more of the excitement that can emerge from a discovery approach to emerge (see, Light, 2014). For example, he could have asked, “how was that compared to when you had elbows in?”, why do you think that was more effective?”. They could also have been directed toward being aware of what muscle group they were engaging with elbows out by asking them to repeat the exercise and be aware of what muscles they were using. The questioning used in this approach needs to generate thinking, dialogue and interaction (Light, 2013). Even when using



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a guided discovery teaching style (Mosston & Ashworth, 1986) this requires using open-ended questions that encourage divergent thinking and creativity through the opportunities they open up, instead of shutting down possibilities to encourage convergent thinking (Forrest, 2014; Wright & Forrest, 2007).

Then, following the 'unders and overs' activity, the swimmers could be asked to enter the water to swim down the pool with elbows in and then back with elbows out (just 10 to 20 metres would be enough) and to compare how the two methods felt. While they are still in the water the coach could then ask them why it is better with elbow out and perhaps even link it to related technical concerns such as pulling from the top of the water after entry.

Once they have a deep understanding of this, the coach's task is made easier because they can reflect upon it and fine-tune it while they swim. The development of deep understanding and deep knowledge is further enhanced by relating this and other technical aspects of swimming to the two fundamental concepts of swimming which are: 1) maximizing propulsion/thrust and 2) Minimizing resistance. One or two sessions would probably be enough to help develop this understanding in young age group swimmers and provide knowledge that the coach can relate instructions or questions to in the future. Once they know *why*, they will be better placed to learn *how* and to develop as thinking reflective athletes/learners. Central to this approach is the empowerment of the swimmer.

In this approach the provision of intellectual quality is evident in the deep understanding and deep knowledge developed. The quality learning environment is evident in the dialogue and interaction between swimmers and between the coach and the swimmers and the supportive socio-cultural environment required in Game Sense for learners to feel confident to speak up, experiment and collaborate. The positive approach of seeing 'mistakes' as part of learning is of central importance for this approach and differs from an essentially negative and sometimes even abusive approach of some swimming coaches. When the learning in this example is related to maximizing propulsion as a fundamental concept, the significance of learning should be made explicit by the coach in its transfer to other strokes. As I have suggested in this article, this *way* of learning could also be brought to the attention of the swimmers – not just for swimming but for learning in life more generally.

## DISCUSSION

This article builds upon research and writing in which, with colleagues, I have argued for extending the knowledge we have developed about quality pedagogy in the teaching of games and coaching of team sports to other physical activities (see, Light, 2008; Light & Kental, 2013; Light & Wallian, 2008). In it the focus is on the ways in which the core features of Game Sense pedagogy can be applied to teaching ‘technique-intensive’ (Light & Kental) and individual sports to provide high quality teaching and learning. This is done by using the NSWQTF as an indicator of quality teaching as a well-developed measure of teaching quality based upon extensive research and one which it has been argued in the physical education field, suggests the quality of Game Sense pedagogy (Light; Curry and Mooney, 2014; Pearson, et al., 2006). Quantitative measures of improvement in the quality of teaching in physical education due to the adoption of a Game Sense approach, using the NSWQTF as a measure of quality, offers strong support for these claims (Miller, Christensen, Eather & Revalds Lubans, 2013). In addition to offering a means of highlighting the quality of Game Sense pedagogy the NSWQTF offers a useful means of ensuring that teachers are indeed providing high quality teaching and learning when employing Game Sense pedagogy.

I have used two examples of how Game Sense pedagogy can be applied outside games to provide quality teaching and learning that focus on areas that have typically been considered as suitable only for direct instruction. Providing two specific examples of how the features of Game Sense pedagogy can be applied to teaching to improve skills and technique challenges the idea that student-centred, inquiry-based teaching is suitable only for games. In doing so I am hopeful that this might encourage teachers to pursue the delivery of high quality teaching in physical education across all aspects of the practical curriculum from primary school to year ten. I close by suggesting that this delivery of quality teaching could be extended to any learning that involves the body and movement. For example, outdoor education provides an ideal set of circumstances and intended educational outcomes for providing high quality teaching and learning as measured by the NSWQTF when teaching is guided by Game Sense pedagogy. As Hopper and colleagues (2009) suggest with TGfU – it is just good pedagogy.

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